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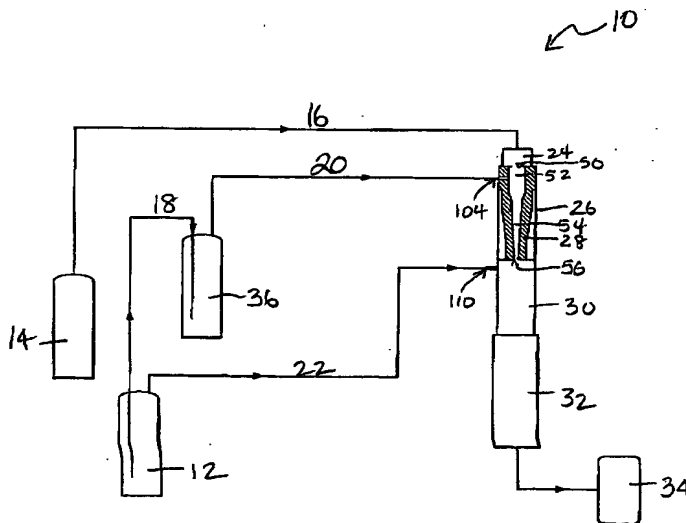
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(54) Title: METHOD OF PRODUCING NANOPARTICLES USING A EVAPORATION-CONDENSATION PROCESS WITH A REACTION CHAMBER PLASMA REACTOR SYSTEM



(57) Abstract: The present invention provides a method and apparatus for the controlled synthesis of nanoparticles using a high temperature process. The reactor chamber includes a high temperature gas heated by means such as a plasma torch, and a reaction chamber. The homogenizer includes a region between the reactant inlets and the plasma (the spacer zone) to ensure that feeds from the reactant inlets are downstream of the recirculation zone induced by the high temperature gas. It also includes a region downstream of the reactant inlets that provides a nearly 1 dimensional (varying only in the axial direction) flow and concentration profile in the reaction zone to produce nanoparticles with narrow size distribution.

WO 2004/056461 A2



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